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June 23, 2010

The Department of Energy  
Office of Electricity Delivery and Energy Reliability  
OE-20, Room 6H-034  
1000 Independence Avenue, S.W.  
Washington, DC 20585

**Re: Application of British Columbia Transmission Corporation and British Columbia Hydro and Power Authority for Amendment or, in the Alternative, Rescission and Reissuance of Presidential Permit, Presidential Permit No. PP-22**

Dear Sir/Madam:

In accordance with Section 205.323 of the Department of Energy's ("DOE") regulations, 10 C.F.R. § 205.323 (2009), enclosed for filing in the above-captioned proceeding are an original and nine (9) copies of the Application of British Columbia Transmission Corporation ("BCTC") and British Columbia Hydro and Power Authority ("BC Hydro") (jointly, the "Applicants") for Amendment or, in the Alternative, Rescission and Reissuance of Presidential Permit ("Application"). Also enclosed is a check for the filing fee in the amount of \$150 made out to Treasurer of the United States.

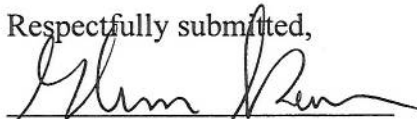
As discussed more fully in the Application, the Applicants respectfully request DOE approval, effective July 5, 2010, to coincide with the transfer of all of BCTC's assets to BC Hydro that will occur by operation of law on that day pursuant to British Columbia's Clean Energy Act. The Applicants apologize for submitting this Application on short notice but did not know until very recently what the effective date of the transfer would be.

In the interest of getting this Application filed as expeditiously as possible, we are submitting photocopies of the executed certificates of counsel. We will forward to you the originals as soon as we receive them.

Should you have any questions or concerns regarding this matter, please contact the undersigned.

The Department of Energy  
June 23, 2010  
Page 2

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Glenn S. Benson", written over a horizontal line.

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**Attorney for**  
**British Columbia Transmission Corporation and**  
**British Columbia Hydro and Power Authority**

UNITED STATES OF AMERICA  
BEFORE THE  
DEPARTMENT OF ENERGY  
OFFICE OF FOSSIL ENERGY

BRITISH COLUMBIA TRANSMISSION	)	
CORPORATION	)	
AND	)	PRESIDENTIAL PERMIT
BRITISH COLUMBIA HYDRO AND POWER	)	NO. PP-22
AUTHORITY	)	

**APPLICATION OF BRITISH COLUMBIA TRANSMISSION CORPORATION AND  
BRITISH COLUMBIA HYDRO AND POWER AUTHORITY FOR AMENDMENT  
OR, IN THE ALTERNATIVE, RESCISSION AND REISSUANCE OF  
PRESIDENTIAL PERMIT**

## **TABLE OF CONTENTS**

1. INFORMATION REGARDING THE APPLICANTS
  - 1.1 Legal Name of Applicants
  - 1.2 Legal Names of All Partners
  - 1.3 Communications and Correspondence
  - 1.4 Foreign Ownership and Affiliations
  - 1.5 Existing Contracts with Foreign Governments or Foreign Private Concerns
  - 1.6 Compliance with Law
  - 1.7 Successor to BCTC
2. INFORMATION REGARDING THE PERMITTED FACILITIES
  - 2.1 Description of the Transmission Lines
  - 2.2 Maps
  - 2.3 Bulk Power System Information
3. INFORMATION REGARDING POTENTIAL ENVIRONMENTAL IMPACT
4. EXHIBITS

UNITED STATES OF AMERICA  
BEFORE THE  
DEPARTMENT OF ENERGY  
OFFICE OF FOSSIL ENERGY

BRITISH COLUMBIA TRANSMISSION	)	
CORPORATION	)	
AND	)	PRESIDENTIAL PERMIT
BRITISH COLUMBIA HYDRO AND POWER	)	NO. PP-22
AUTHORITY	)	

**APPLICATION OF BRITISH COLUMBIA TRANSMISSION CORPORATION AND  
BRITISH COLUMBIA HYDRO AND POWER AUTHORITY FOR AMENDMENT  
OR, IN THE ALTERNATIVE, RESCISSION AND REISSUANCE OF  
PRESIDENTIAL PERMIT**

Pursuant to Section 202(e) of the Federal Power Act, 16 U.S.C. § 824(a)(e), Executive Order 10485, as amended by Executive Order 12038, and the U.S. Department of Energy ("DOE"), Office of Fossil Energy's administrative procedures (10 C.F.R. §§ 205.320, et seq.), British Columbia Transmission Corporation ("BCTC") and British Columbia Hydro and Power Authority ("BC Hydro") (jointly "Applicants") hereby respectfully file this application for an amendment to Presidential Permit PP-22 authorizing BC Hydro, as successor in interest to BCTC, to operate and maintain the permitted electric transmission facilities which cross the international boundary between the United States of America ("U.S.") and Canada twice in the Strait of Georgia (the "Permitted Facilities"), or in the alternative for Presidential Permit PP-22 to be rescinded and reissued to BC Hydro, as more fully described herein ("Application"). Applicants respectfully request that the amendment or rescission/reissuance be made effective July 5, 2010, to coincide with the date that BCTC will be integrated into BC Hydro pursuant to Part 7 of the Clean Energy Act enacted by the Legislative Assembly of the Province of British Columbia, Canada. A copy of the Presidential Permit PP-22 (originally issued by the DOE in Federal Power commission Docket No. E-6588, 1955), together with its subsequent

amendments, is attached to this Application as Exhibit A (the "Permit"). In support of this Application, Applicants respectfully state as follows:

## **I. INFORMATION REGARDING THE APPLICANTS**

### **1.1 Legal Name of Applicants**

The legal names of the Applicants are British Columbia Transmission Corporation and British Columbia Hydro and Power Authority. BCTC is a provincial Crown corporation under the laws of the Province of British Columbia, Canada, having a principal place of business at Suite 1100, Four Bentall Centre, 1055 Dunsmuir Street, Vancouver, British Columbia, Canada.

BC Hydro is a provincial Crown corporation under the laws of the Province of British Columbia, Canada, having a principal place of business at 333 Dunsmuir Street, Vancouver, British Columbia, Canada.

### **1.2 Legal Names of All Partners**

The Applicants have no partners in connection with the Project.

### **1.3 Communications and Correspondence**

All communications and correspondence regarding this Application should be addressed to the following:

Glenn S. Benson  
Perkins Coie LLP  
607 Fourteenth Street, NW  
Washington, D.C. 20005-2003  
Tel: (202) 434-1603  
Fax: (202) 654-9145  
Email: [gbenson@perkinscoie.com](mailto:gbenson@perkinscoie.com)

#### **BCTC (until July 5, 2010):**

Bruce Barrett, P.Eng.  
Vice President, Major Projects  
British Columbia Transmission Corporation  
Suite 1100, Four Bentall Centre

1055 Dunsmuir Street  
PO Box 49260  
Vancouver, British Columbia V7X 1V5  
Canada  
Tel: (604) 699-7380  
Fax: (604) 699-7321  
Email: [bruce.barrett@bctc.com](mailto:bruce.barrett@bctc.com)

**BC Hydro:**

Joanna Sofield  
Chief Regulatory Officer  
BC Hydro  
333 Dunsmuir Street, 16<sup>th</sup> Floor  
Vancouver, British Columbia V6B 5R3  
Canada  
Tel: (604) 623-4046  
Fax: (604) 623-4407  
Email: [bchydroregulatorygroup@bchydro.com](mailto:bchydroregulatorygroup@bchydro.com)

**1.4 Foreign Ownership and Affiliations**

BCTC and BC Hydro are provincial Crown corporations, each organized and owned by the Province of British Columbia and administered by a government-appointed board of directors for a public purpose. BC Hydro has the corporate authority to operate and maintain the facilities under Presidential Permit No. PP-22. The Project's transmission facilities will continue to be owned by BC Hydro.

**1.5 Existing Contracts with Foreign Governments or Foreign Private Concerns**

The international electric transmission facilities authorized by Presidential Permit PP-22 do not connect to an U.S. electrical facility, but rather connect the mainland of British Columbia and Vancouver Island, Canada. The Applicants do not have any existing contracts with any foreign (i.e., non-Canadian or non-U.S.) government, or any foreign (i.e., non-Canadian or non-U.S.) private concerns, relating to the Permitted Facilities or to any purchase, sale or delivery of electric energy over the Permitted Facilities. No such contracts with respect to the Permitted

Facilities are expected to be entered into in the future, but if any such contracts are entered into before the Project is completed, they will be disclosed to the DOE.

## **1.6 Compliance with Law**

As set forth in opinions of counsel attached to this Application as Exhibit B, the operation and maintenance of the Permitted Facilities as described herein is within the corporate powers of BCTC and BC Hydro. Further, BCTC has complied and BC Hydro will comply with all pertinent federal and state laws related to the construction, connection, operation, and maintenance of the Permitted Facilities.

## **1.7 Successor to BCTC**

Pursuant to Part 7 of British Columbia's Clean Energy Act, BCTC will be integrated into BC Hydro effective July 5, 2010 to provide a single entity to deliver clean, reliable electricity while creating new economic opportunities across the province. By Sections 22 and 23 of the Clean Energy Act, BCTC's rights, property, assets and its obligations and liabilities will be transferred to BC Hydro on July 5, 2010, or shortly thereafter for those contracts and permits which require consent for assignment. Although, as of July 5, 2010, BCTC will continue to exist as a wholly owned subsidiary of BC Hydro, BCTC will cease being an operating entity. Thus, BC Hydro will acquire the powers, rights, privileges, concessions and franchises of BCTC with respect to the operation and maintenance of the transmission system previously operated by BCTC, including the Permitted Facilities. The Applicants therefore request that, effective July 5, 2010, the Permit be amended to name BC Hydro as the Permittee or, in the alternative, that the Permit be rescinded and reissued to BC Hydro. In order to ensure continuity of service over the Permitted Facilities, BCTC will have BC Hydro operate and maintain the Permitted Facilities from July 5, 2010 until such date that DOE takes action on this application.

## **2. INFORMATION REGARDING THE PERMITTED FACILITIES**

### **2.1 Description of the Transmission Lines**

The description of the transmission lines covered by the Presidential Permit is unchanged from how it is described in BCTC's March 26, 2007 Application for a Presidential Permit Amendment, which was approved in Order No. PP-22-4, and is attached hereto as Exhibit C. The facilities BCTC was authorized to construct in that order have been constructed and placed into service. No changes to the Permitted Facilities are contemplated at this time.

### **2.2 Maps**

The combined general area map and other maps attached as Exhibit D to the March 26, 2007 Application continue to accurately show the physical location (longitude and latitude) and ownership of the facilities on the international border.

### **2.3 Bulk Power System Information**

No bulk power system information is provided with this Application because there will be no bulk power supply facility within the U.S.

## **3. INFORMATION REGARDING POTENTIAL ENVIRONMENTAL IMPACTS**

Applicants do not request authorization to construct any new facilities. The authorizations requested in this Application will not have an impact on the environment.

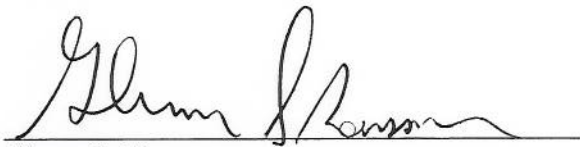
## **4. EXHIBITS**

The following exhibits are included:

Exhibit A	Presidential Permit PP-22, as amended to the date of this Application
Exhibit B	Opinions of Counsel for the Applicants
Exhibit C	BCTC's March 26, 2007 Application for a Presidential Permit Amendment, which was approved in Order No. PP-22-4

WHEREFORE, for the foregoing reasons, BCTC and BC Hydro respectfully request that the DOE either (i) amend Permit No. PP-22 to designate BC Hydro as the Permittee, effective July 5, 2010, or, in the alternative, (ii) rescind Permit No. PP-22 and reissue it to BC Hydro, effective July 5, 2010.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Glenn S. Benson", written over a horizontal line.

Glenn S. Benson  
Perkins Coie LLP  
607 Fourteenth Street, NW  
Washington, D.C. 20005  
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**Attorney for  
British Columbia Transmission Corporation and  
British Columbia Hydro and Power Authority**

June 23, 2010

## **EXHIBIT A**

8-11-54

Wm Hamman  
PP-22

PERMIT

AUTHORIZING

BRITISH COLUMBIA ELECTRIC COMPANY, LIMITED  
TO CONSTRUCT, OPERATE AND MAINTAIN  
ELECTRIC TRANSMISSION FACILITIES  
AT THE INTERNATIONAL BORDER BETWEEN  
THE UNITED STATES AND CANADA  
(FEDERAL POWER COMMISSION - DOCKET NO. E-6588)

Released on  
April 4, 1955  
12/19/59

British Columbia Electric Company, Limited (hereinafter referred to as Permittee), incorporated in the Province of British Columbia, Dominion of Canada, and having its principal place of business at Vancouver, British Columbia, in an application filed in Docket No. E-6588 on November 2, 1954, requested permission to construct, operate and maintain the electric transmission facilities described in Article 2 below, at the international border between the United States and Canada, for the transmission of electric energy between the United States and Canada.

By letter dated Feb. 21, 1955 the Secretary of State, and by letter dated Jan 26, 1955 the Secretary of Defense favorably recommended that the permit be granted as hereinafter provided.

Upon consideration of this matter the Commission finds that the issuance of a permit as hereinafter provided is appropriate and consistent with the public interest.

Pursuant to the provisions of Executive Order No. 10485, dated September 3, 1953, and the Commission's General Rules and Regulations,

permission is hereby granted to Permittee to construct, operate, and maintain the electric transmission facilities, described in Article 2 below, crossing the international border at two points under the waters of the Strait of Georgia adjacent to the Province of British Columbia, Canada.

Article 1. It is expressly agreed by the Permittee that the facilities herein described shall be subject to all conditions, provisions and requirements of this permit; Permittee agrees that this permit may be modified or revoked by the President of the United States or the Federal Power Commission, and may be amended by the Federal Power Commission upon proper application therefor.

Article 2. The facilities covered by and subject to this permit shall include the following:

Four single-conductor, 132-kv submarine cables, spaced some 500 yards apart, three of which will constitute a three-phase circuit having a capacity of 120,000 kw, extending in a south-westerly direction some 14.2 miles in all from the mainland of British Columbia under the waters of the Strait of Georgia to Galiano Island, British Columbia. The proposed cables in their passage across the Strait will cross the international boundary, will pass through United States territorial waters a distance of 7.0 miles and will again cross the international boundary into Canadian waters. The terminal point of the cables on the British Columbia mainland will be located by a concrete monument at Tsawassen Beach, situated about 1993 feet north of

the international boundary, between the State of Washington and British Columbia, at a point in the southwest corner of Lot 2, Timber Lot 9, Secs. 3 and 4, Township 5 New Westminster District. The terminus of the four submarine cables on Galiano Island will also be marked by a concrete monument located at the southern tip of Taylors Bay, which is approximately  $3\frac{1}{4}$  mile west of Salamanca Point. The monument is set in Lot 15, being on a bearing of  $S\ 38^{\circ}\ 00'\ W$  and 186.4 feet from the N.E. corner of Lot 15, said N.E. corner being also 1365.0 feet north from the S.E. corner of Lot 15 measured along the boundary between Lots 14 and 15, Cowichan District.

The above facilities are more specifically shown and described in the application. No substantial change shall hereafter be made in the facilities and operations authorized by this permit until such changes shall have been approved by the Commission.

Article 3. The construction, operation, and maintenance of the aforesaid facilities shall be subject to the inspection and approval of the District Engineer, Corps of Engineers, United States Army, in charge of the district affected herein, and a representative of the Commission, both of whom shall be authorized representatives of the United States for such purposes.

Article 4. In the construction, operation, and maintenance of the facilities herein specified, the Permittee shall place and maintain suitable equipment to reduce to a reasonable degree the liability of contact or inductive interference between its transmission line and any other

facilities not owned by the Permittee.

Article 5. If, in the future, it should appear to the Secretary of the Army that any facilities or operations permitted hereunder cause unreasonable obstruction to the free navigation of any of the navigable waters of the United States, the Permittee may be required, upon notice from the Secretary of the Army, to remove or alter the same so as to render navigation through such waters free and unobstructed.

Article 6. The Permittee shall be liable for all damages occasioned to the property of others by the construction, operation, and maintenance of the aforesaid facilities, and in no event shall the United States be liable therefor.

Article 7. Permittee agrees to file with the Commission, under oath and in such detail as the Commission may require, such statements or reports, with respect to the energy transmitted or the facilities authorized herein, as the Commission may, from time to time, request. Such information may be made available to any Federal, State, or local agency requesting such information.

Article 8. Neither this permit nor the facilities, or any part thereof, covered by this permit, shall be transferable or assignable, but the permit shall continue in effect temporarily for a reasonable time thereafter, in the event of the involuntary transfer of the facilities by operation of law (including such transfers to receivers, trustees, or purchasers under foreclosure or judicial sales) pending the making of an application for a new permit and decision thereon, provided notice is promptly given in writing to the Commission accompanied by a statement that the

facilities authorized by this permit remain substantially the same as before the transfer. The Permittee shall maintain the facilities, or any part thereof, in a condition of repair for the efficient operation of said facilities in the transmission of electric energy, and shall make all necessary renewals and replacements.

Article 9. Upon the termination, revocation or surrender of this permit, the facilities shall be removed within such time as the Commission may specify and at the expense of the Permittee. Upon failure of the Permittee to remove such facilities or any portion thereof, the Commission may direct that possession of the same may be taken and the facilities removed at the expense of the Permittee, and the Permittee shall have no claim for damages by reason of such possession or removal.


Article 10. The Permittee agrees that when, in the opinion of the President of the United States, evidenced by a written order addressed to it as holder of this permit, the safety of the United States demands it, the United States shall have the right to enter upon and take possession of the facilities, or any part thereof, maintained or operated under this permit, and shall retain possession, management and control thereof for such length of time as may appear to the President to be necessary to accomplish said purpose, and then restore possession and control to the Permittee; and in the event that the United States shall exercise such right, it shall pay to the Permittee just and fair compensation for the use of said facilities as may be fixed by the Commission upon the basis of a reasonable profit in time of peace, and the cost of restoring said facilities

Docket No. E-6588  
(Cont'd)

- 6 -

to as good condition as existed at the taking over thereof, less the reasonable value of any improvements that be made thereto by the United States and which are valuable to the Permittee:

IN WITNESS WHEREOF, I, Jerome K. Kuykendall, have hereunto signed my name this 10 day of March, 1955, in the City of Washington, District of Columbia.

  
Jerome K. Kuykendall  
Chairman of the  
Federal Power Commission

IN TESTIMONY OF ACCEPTANCE of all the provisions, conditions, and requirements of this permit, the Permittee this 3rd day of March, 1955, has caused its name to be signed by \_\_\_\_\_, its \_\_\_\_\_ President, and its corporate seal to be affixed hereto and attested by \_\_\_\_\_, its \_\_\_\_\_ Secretary, pursuant to a resolution of its Board of Directors duly adopted on the 3rd day of March, 1955, a certified copy of the record of which is attached hereto.

\_\_\_\_\_  
Permittee

By

SEAL

(Attest)

\_\_\_\_\_  
Secretary

Executed in triplicate

AMENDMENT TO PERMIT AUTHORIZING  
BRITISH COLUMBIA ELECTRIC COMPANY, LIMITED  
TO CONSTRUCT, OPERATE AND MAINTAIN  
ELECTRIC TRANSMISSION FACILITIES AT  
THE INTERNATIONAL BORDER BETWEEN  
THE UNITED STATES AND CANADA

(Federal Power Commission - Docket No. E-6588)

British Columbia Electric Company, Limited, (Permittee), by application filed May 6, 1955, requests an amendment to its Permit, signed by the Chairman of the Federal Power Commission on March 10, 1955 and released by the Commission on April 4, 1955, authorizing it to construct, operate and maintain electric facilities at the international border between the United States and Canada, and under the waters of the strait of Georgia, for the transmission of electric energy between the United States and Canada (Permit). Permittee proposes to construct a cable in addition to the four cables authorized in its Permit extending from the mainland of British Columbia through United States territorial waters to Galiano Island, British Columbia.


By letter dated *July 1*, 1955, the Secretary of State, and by letter dated *July 8*, 1955, the Secretary of Defense favorably recommended that the Permit be amended as hereinafter provided.

Upon consideration of this matter, the Federal Power Commission, finds that this issuance of the amendment to the Permit, as hereinafter provided, is appropriate and consistent with the public interest.

Pursuant to the provisions of Executive Order No. 10485, dated September 3, 1953, and the Commission's several Rules and Regulations, the Permit is amended by substituting the word "five" for the word "four" wherever it appears in Article 2 thereof, and by inserting in such article the words "and two of which will constitute spares" after "120,000 kw" in line 3 of the description of facilities.

The additional facilities herein authorized shall be subject to all of the terms and conditions of the Permit as amended.

IN WITNESS WHEREOF, I Jerome K. Kuykendall, have hereunto signed my name this *21st* day of *July*, 1955, in the City of Washington, District of Columbia.

  
Chairman of the Federal  
Power Commission

IN TESTIMONY OF ACCEPTANCE of all the provisions, conditions  
and requirements of this Permit, as amended, the Permittee this day of <sup>28th</sup>  
*July*, 1955 has caused its name to be signed by  
its President, and its corporate seal to be affixed hereto and attested  
by \_\_\_\_\_, its Secretary, pursuant to  
a resolution of its Board of Directors duly adopted on the <sup>28</sup> day of  
*July*, 1955, a certified copy of the record of which is attached hereto.

\_\_\_\_\_  
Permittee

SEAL

(Attest)

\_\_\_\_\_  
Secretary

(Executed in triplicate)

2-4-58

PP-22

AMENDMENT TO PERMIT

AUTHORIZING, PURSUANT TO EXECUTIVE ORDER NO. 10485,

BRITISH COLUMBIA ELECTRIC COMPANY, LIMITED

TO CONSTRUCT, OPERATE, AND MAINTAIN CERTAIN  
FACILITIES AT THE INTERNATIONAL BOUNDARY FOR  
THE TRANSMISSION OF ELECTRIC ENERGY BETWEEN

THE UNITED STATES AND CANADA

(FEDERAL POWER COMMISSION - DOCKET NO. E-6588)

*Released by  
letter on 3-17-58*

British Columbia Electric Company, Limited (Permittee), by application filed November 21, 1957, seeks a further Amendment to its Permit, signed by the Chairman of the Federal Power Commission on July 21, 1955, and accepted by the Permittee on July 28, 1955, authorizing it to construct, operate and maintain electric facilities at the international border between the United States and Canada, and under the waters of the Strait of Georgia, for the transmission of electric energy between the United States and Canada. Permittee proposes to construct two single-conductor, 132-kv submarine cables in addition to the five cables authorized in its Permit extending from the mainland of British Columbia through United States territorial waters to Galiano Island, British Columbia.\* The two additional cables will lie to the north and west of the five cables described in the Permit (as amended) and will be spaced approximately 500 yards and 1,000 yards, respectively, northerly and westerly of the most northerly and westerly of those five cables.

By letter dated December , 1957, the Secretary of State and by letter dated December , 1957, the Secretary of Defense favorably recommended that the aforesaid Permit be further amended as hereinafter provided.

Upon consideration of this matter, the Federal Power Commission finds that this issuance of the Amendment to the Permit, as hereinafter provided, is appropriate and consistent with the public interest.

\*/ Permittee's original Permit, signed by the Chairman of the Federal Power Commission on March 10, 1955, and accepted by the Permittee on March 24, 1955, authorized the construction, operation, and maintenance of four cables of the nature described above between the same geographical points.

Pursuant to the provisions of Executive Order No. 10485, dated September 3, 1955, and the Commission's Regulations, the aforesaid Permit is further amended by substituting the following for Article 2 as therein contained; provided that all other terms and conditions of that Permit, as amended, shall remain in full force and effect:

Article 2. The transmission facilities covered by and subject to this Permit shall include, in addition to the following works and facilities, all lands within the rights-of-way occupied by such works and facilities:

Seven single-conductor, 132-kv submarine cables, spaced some 500 yards apart, six of which will constitute two three-phase circuits, each having a capacity of 120,000 kw, and one of which will constitute a spare, extending in a southwesterly direction some 14.2 miles in all from the mainland of British Columbia under the waters of the Strait of Georgia to Galiano Island, British Columbia. The proposed cables in their passage across the Strait will cross the international boundary, will pass through United States territorial waters a distance of 7.0 miles and will again cross the international boundary into Canadian waters. The terminal point of the cables on the British Columbia mainland will be located by a concrete monument at Tsawassen Beach, situated about 1993 feet north of the international boundary between the State of Washington and British Columbia, at a point in the southwest corner of Lot 2, Timber Lot 9, Secs. 3 and 4, Township 5, New Westminster District. The terminus of the seven submarine cables on Galiano Island will also be marked by a concrete monument located at the southern tip of Taylor Bay, which is approximately 3/4 mile west of Salamanca Point. The monument is set in Lot 15, being on a bearing of S. 38°00' W. and 186.4 feet from the N.E. corner of Lot 15, said N.E. corner being also 1365.0 feet north from the S.E. corner of Lot 15 measured along the boundary between Lots 14 and 15, Cowichan District;

which facilities are more specifically shown and described in the applications heretofore filed in this matter by the Permittee. No substantial change shall hereafter be made in the facilities and operations authorized by this Permit until such change shall have been approved by the Commission.

British Columbia Elec. Co., Ltd. - 3 -

IN WITNESS WHEREOF, I, Jerome K. Kuykendall, have hereunto signed  
my name this 4<sup>th</sup> day of February 1958, in the City of Washington,  
District of Columbia.

Chairman, Federal Power Commission

IN TESTIMONY OF ACCEPTANCE of all the provisions, conditions, and requirements of this Amendment to the aforesaid Permit, the Permittee, this       day of       , 1957, has caused its name to be signed by       , its       and its corporate seal to be affixed hereto and attested by its       Secretary, pursuant to a resolution of its Board of Directors duly adopted on the       day of       1957, a certified copy of the record of which is attached hereto.


BRITISH COLUMBIA ELECTRIC COMPANY, LIMITED

By \_\_\_\_\_

(Seal)

\_\_\_\_\_  
Attest

Executed in Triplicate



*Advance copy*  
PP-22

Amendment To Permit

Authorizing, Pursuant To Executive Order No. 10485,  
British Columbia Hydro And Power Authority  
(Successor To British Columbia Electric Company Limited)  
To Construct, Operate And Maintain  
Electric Transmission Facilities At The  
International Border Between The  
United States And Canada  
(Federal Power Commission - Docket No. E-6588)

British Columbia Hydro and Power Authority (Applicant),  
a Crown Corporation as hereinafter set forth, with its principal place of business at Vancouver, British Columbia, Canada, in an application filed March 28, 1967, pursuant to Executive Order No. 10485, dated September 3, 1953, seeks further amendment of the Permit signed by the Chairman of the Federal Power Commission on March 10, 1955, wherein Applicant's predecessor in interest, British Columbia Electric Company Limited (B. C. Electric), was authorized to construct, operate and maintain at the international border between the United States and Canada under the waters of the Strait of Georgia and through United States territorial waters certain electric

transmission facilities, all in the above docket. The aforesaid Permit has heretofore been modified by Amendments signed by the Chairman of the Federal Power Commission on July 21, 1955 and February 4, 1958, in the above docket.

Applicant requests permission to construct, operate and maintain three single conductor 260 kv submarine cables in addition to seven single conductor 132 kv submarine cables constructed by B. C. Electric pursuant to the aforesaid Permit as amended. The proposed cables will extend from the mainland of British Columbia under the waters of the Strait of Georgia and through United States territorial waters to Galiano Island, British Columbia, and thence on to Vancouver Island, British Columbia. The proposed cables will be parallel to and to the north and west of the currently authorized and existing cables. The proposed cables will be utilized, as are the existing cables, for the transmission of electric energy from the British Columbia mainland to Vancouver Island.

By letter filed March 28, 1967 in the above docket by its attorneys, Applicant, as successor to B. C. Electric, also requests that the aforesaid Permit be amended to name

Applicant as Permittee. The application filed March 28, 1967 in the above docket, together with certain exhibits submitted as part of that application, indicates that Applicant is a Crown Corporation and an agency of the Crown in the right of the Province of British Columbia, Dominion of Canada, under the provisions of the British Columbia Hydro and Power Authority Act, 1964 (Act) enacted by the Legislative Assembly of the Province; that pursuant to the Act and the Power Measures Act, 1964, of the Province, Applicant amalgamated with B. C. Electric, among others; that the amalgamation was effected by an agreement made August 20, 1965, by Applicant with B. C. Electric, among others, as confirmed by the Power Measures Act, 1966, of the Province; and that pursuant to the Act and the 1965 amalgamation agreement, B. C. Electric ceased to exist as a separate corporation and Applicant, as the surviving corporation, acquired all the properties, assets, powers, rights, privileges, concessions and franchises of B. C. Electric, among others, and assumed, subject to the Power Measures Act, 1964, of the Province, all the duties, liabilities and obligations of B. C. Electric, among others.

The Secretary of State by letter dated July 24, 1967 and the Secretary of Defense by letter dated July 17, 1967 favorably recommended that the aforesaid Permit be further amended as hereinafter provided.

Upon consideration of this matter, the Commission finds that the issuance of an Amendment to the aforesaid Permit as hereinafter provided is appropriate and consistent with the public interest.

Pursuant to the provisions of Executive Order No. 10485, dated September 3, 1953, and the Commission's Rules and Regulations thereunder, the aforesaid Permit, as amended, is further amended by substituting (1) British Columbia Hydro and Power Authority for British Columbia Electric Company Limited as the holder of the Permit, as hereby amended, and (2) the following Article 2 for Article 2 as therein contained; provided that all other terms and conditions of that Permit, as amended, shall remain in full force and effect:

Article 2. The facilities covered by and subject to this permit shall include:

- (a) Seven single conductor, 132 kv submarine cables, spaced some 500 yards apart, six of which will constitute two three-phase

circuits, each having a capacity of 120,000 kw, and one of which will constitute a spare, extending in a southwesterly direction some 14.2 miles in all from the mainland of British Columbia under the waters of the Strait of Georgia to Galiano Island, British Columbia. The proposed cables in their passage across the Strait will cross the international boundary, will pass through United States territorial waters a distance of 7.0 miles and will again cross the international boundary into Canadian waters. The terminal point of the cables on the British Columbia mainland will be located by a concrete monument at Tsawwassen Beach, situated about 1993 feet north of the international boundary between the State of Washington and British Columbia, at a point in the southwest corner of Lot 2, Timber Lot 9, Secs. 3 and 4, Township 5, New Westminster District. The terminus of the seven submarine cables on Galiano Island will also be marked by a concrete monument located at the southern tip of Taylor Bay, which is approximately  $3/4$  mile west of Salamanca Point. The monument is set in Lot 15, being on a bearing of S.  $38^{\circ} 00'$  W. and 186.4 feet from the N.E. corner of Lot 15, said N.E. corner being also 1365.0 feet north from the S.E. corner of Lot 15 measured along the boundary between Lots 14 and 15, Cowichan District; and

- (b) Three single conductor, 260 kv submarine cables spaced some 500 yards apart, two of which with a single ground return path will constitute two parallel circuits having a combined transmission capacity of 312,000 kilowatts at 260 k.v., 1200 amps and one of which will constitute a spare, extending in a southwesterly direction some 15.1 land

miles in all from the mainland of British Columbia under the waters of the Strait of Georgia to Galiano Island, British Columbia. The proposed cables in their passage across the Strait will cross the international boundary between Canada and the United States, will pass through United States territorial waters an average distance of some 4.2 land miles and will again cross the international boundary into Canadian waters. The terminal point of the cables will be located by a concrete monument at Tsawwassen Beach, situated at N 22°06' 30" W 18,478 feet more or less of International Boundary Monument No. 1 marking the International Boundary between Canada and the United States. The terminus of the three submarine cables on Galiano Island will be marked by a rock monument located at the high water mark of Cook's Cove and N 73° 06' W 14,972 feet more or less from Canadian Hydrographic survey station "Sally" (Salamanca Point).

The above facilities are more specifically shown and described in the applications filed November 9, 1954, May 6, 1955, November 21, 1957 and March 28, 1967 in the above docket. No substantial change shall hereafter be made in the facilities and operation thereof authorized by this permit unless and until such change shall have been approved by the Commission.

IN WITNESS WHEREOF, I, Lee C. White, have  
hereunto signed my name this 24<sup>th</sup> day of August,  
1967 in the City of Washington, District of Columbia.

LEE C. White  
Chairman of the Federal Power  
Commission

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United States  
Department of Energy

Office of Electricity Delivery and Energy Reliability

British Columbia Transmission Corporation

OE Docket No. PP-22-4

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Presidential Permit Amendment  
No. PP-22-4

September 5, 2007

# **PRESIDENTIAL PERMIT AMENDMENT**

## **British Columbia Transmission Corporation**

### **Order No. PP-22-4**

#### **I. BACKGROUND**

The Office of Electricity Delivery and Energy Reliability (OE) of the Department of Energy (DOE) has responsibility for implementing Executive Order (EO) 10485, as amended by EO 12038, which requires the issuance of a Presidential permit for the construction, operation, maintenance, and connection of electric transmission facilities at the international borders of the United States.<sup>1</sup> DOE may issue such a permit if, after obtaining favorable recommendations from the Secretary of State and the Secretary of Defense, it determines that the issuance of the permit is in the public interest.

On March 26, 2007, British Columbia Transmission Corporation (BCTC), a Canadian corporation, filed an application with OE to amend Presidential Permit PP-22, which authorized the construction, operation, and maintenance of seven, single-conductor, 132,000-volt (132-kV) submarine cables and three, single-conductor, 260-kV direct current submarine cables, which cross the U.S. international border twice in the Strait of Georgia. The international electric transmission facilities authorized by Presidential Permit PP-22 do not connect to any U.S. electrical facility, but rather connect

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<sup>1</sup> The authority to grant Presidential permits for electric transmission lines at the U.S. international border pursuant to EO 10485 was transferred from the Federal Power Commission to DOE by EO 12038, dated February 3, 1978, and made effective as of October 1, 1977, the effective date of the Department of Energy Organization Act (42 U.S.C. 7101 *et seq.*). The authority to administer the International Electricity Regulatory Program through the regulation of electricity exports and the issuance of Presidential permits has been delegated to the Director of the Office of Electricity Delivery and Energy Reliability in Redlegation Order No. 00-002.10A issued on January 30, 2007.

the mainland of British Columbia, Canada, and Vancouver Island, passing through approximately 7.5 miles of U.S. territorial waters in the Strait of Georgia. BCTC proposes to replace the three southernmost 132-kV cables with three new submarine cables and to increase the operating voltage of the new cables to 230-kV.

Presidential Permit PP-22 was originally issued to British Columbia Electric Company, LTD on March 10, 1955, by the Federal Power Commission (FPC). The FPC granted amendments to PP-22 on July 21, 1955, and on February 4, 1958, authorizing the installation of additional cables. On August 24, 1967, the FPC granted the latest amendment to PP-22, which authorized the construction, operation, and maintenance of three 260-kV direct current cables. The permit amendment also changed the name of the permit holder to British Columbia Hydro and Power Authority, which was the successor in interest to British Columbia Electric Company.

BCTC is the successor to British Columbia Hydro and Power Authority for purposes of the construction, operation, maintenance, and connection of the subject transmission lines. Therefore, BCTC requests that PP-22 be amended to name BCTC as the Permittee.

Notice of BCTC's application to amend Presidential Permit PP-22 was placed in the *Federal Register* on April 24, 2007, (72 FR 20332) requesting that comments, protests, or petitions to intervene be submitted to DOE by May 24, 2007. None were received.

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## **II. DISCUSSION**

As part of its permit amendment application, BCTC submitted technical studies which demonstrate that the permitted facilities constitute a radial connection between the British Columbia transmission system and Vancouver Island and do not connect to any portion of the U.S. electric power grid. Therefore, electric transmission over the permitted facilities could have no effect on the operation or reliability of the U.S. electric system.

The Secretary of State concurred in the issuance of this amendment to Presidential Permit PP-22. The Secretary of Defense also concurred, but requested the inclusion of several provisions for notifying and coordinating the installation of the new facilities with the Department of the Navy. DOE has agreed to include the requested provisions as conditions in the amended permit with the addition of Article 11 to the permit.

## **III. FINDING AND DECISION**

In determining whether issuance of a permit for a proposed action is in the public interest, DOE considers the environmental impacts of the proposed project pursuant to the National Environmental Policy Act (NEPA) of 1969, determines the project's impact on electric reliability by ascertaining whether the proposed project would adversely affect the operation of the U.S. electric power supply system under normal and contingency conditions, and any other factors that DOE may also consider relevant to the public interest.

DOE has determined that this action is among those classes of actions not normally requiring preparation of an environmental assessment or an environmental impact statement and, therefore, is eligible for categorical exclusion (CX) under Appendix B to Subpart D; paragraph B4.6 of the revised DOE Regulations implementing NEPA. Specifically, this CX is for the addition or modifications to electric power transmission facilities that would not affect the environment beyond the previously developed facility area. Documentation of the use of this CX has been placed in this Docket.

DOE has assessed the impact that the installation and operation of the proposed international transmission facilities would have on the reliability of the U.S. electric power supply system. Based on the information in the docket and as discussed above, DOE has determined that amending PP-22 , as requested by BCTC, and as conditioned herein, would not adversely impact the reliability of the U.S. electric power supply system.

Based upon the above, DOE has determined that amending Presidential Permit PP-22 to allow BCTC to replace and upgrade the three southernmost 132-kV submarine cables described in Article 2 of Presidential Permit PP-22 with new submarine cables to be operated at 230-kV and as conditioned herein is consistent with the public interest.

#### **IV. ORDER**

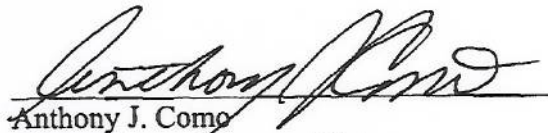
Pursuant to the provisions of EO 10485, as amended by EO 12038, and the Rules and Regulations issued thereunder (Title 10, Code of Federal Regulations, §205.320-329), Presidential Permit PP-22 issued by the FPC to British Columbia Electric Company, LTD. on March 10, 1955, and amended on July 21, 1955, February 4, 1958, and August 24, 1967, is further amended by: (1) substituting British Columbia Transmission Corporation (BCTC) for British Columbia Hydro and Power Authority as the Permittee and holder of the permit, (2) substituting the Department of Energy for references in the permit to the Federal Power Commission or the Commission, (3) authorizing BCTC to replace the three southernmost 132-kV submarine cables described in Article 2 of Presidential Permit PP-22, as amended, with new submarine cables to be operated at 230-kV; and (4) adding the following Article 11 to the permit, provided that all other terms and conditions of Presidential Permit PP-22, as amended, shall remain in full force and effect:

Article 11. The Permittee shall provide marine cable construction details to the U.S. Naval Seafloor Cable Protection Office (NSCPO) for comment, at [nscpo@navy.mil](mailto:nscpo@navy.mil), prior to finalizing the installation plans. The Permittee shall coordinate crossing procedures of any U.S. military cables with NSCPO, and shall not cross any U.S. military cables until authorized to do so by NSCPO.

The Permittee shall notify NSCPO prior to any repair or recovery of the marine cable. In no case shall such notification be less than 24 hours prior to seabed activity.

The Permittee shall provide the Department of the Navy (DON) 24-hour advance notice of the exact location of scheduled cable-laying operations, and real-time information on actual position of such operations, to enable DON to de-conflict submerged and surface U.S. Navy vessel operations in the vicinity. DON point of contact for such coordination is: Mr. Rich Melaas, CNRNW Functional Manager for Range Support, Phone: (360) 257-3315; e-mail: richard.melaas@navy.mil.

Issued in Washington, D.C., on September 5, 2007.



Anthony J. Como  
Director, Permitting and Siting  
Office of Electricity Delivery and  
Energy Reliability

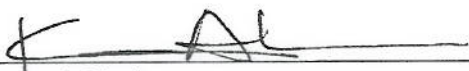
## **EXHIBIT B**

**BRITISH COLUMBIA TRANSMISSION CORPORATION  
OPINION OF COUNSEL**

The undersigned, Karen Adderley, Associate General Counsel for British Columbia Transmission Corporation ("BCTC") states and gives her opinion as follows:

1. I have examined and am familiar with the corporate powers of BCTC, pursuant to BCTC's Notice of Articles and Articles;
2. I have examined and am familiar with the contents of the joint Application for Amendment Or, in the Alternative, Rescission and Reissuance of Presidential Permit, to which this Opinion is attached as an Exhibit;
3. I am of the opinion that the construction, connection, operation and maintenance of the Permitted Facilities have been within the corporate power of BCTC and will continue to be in the corporate power of BCTC until July 5, 2010; and
4. To the best of my knowledge, BCTC has complied with all pertinent federal and state laws with respect to the construction, connection, operation and maintenance of the Permitted Facilities. To the best of my knowledge, BCTC has obtained the pertinent federal and state permits for the Permitted Facilities.

Dated: June 22, 2010

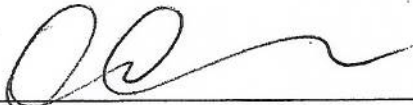
  
\_\_\_\_\_  
Karen Adderley  
Associate General Counsel  
(Barrister and Solicitor in the Province  
of British Columbia, Canada)  
British Columbia Transmission Corporation

**BRITISH COLUMBIA HYDRO AND POWER AUTHORITY  
OPINION OF COUNSEL**

The undersigned, David Avren, Associate General Counsel for British Columbia Hydro and Power Authority (the "BC Hydro") states and gives his opinion as follows:

1. I have examined and am familiar with the corporate powers of BC Hydro, pursuant to Hydro and Power Authority Act (British Columbia);
2. I have examined and am familiar with the contents of the joint Application for Amendment Or, in the Alternative, Rescission and Reissuance of Presidential Permit, to which this Opinion is attached as an Exhibit;
3. I am of the opinion that the operation and maintenance of the Permitted Facilities will be in the corporate power of the Company commencing July 5, 2010; and
4. To the best of my knowledge, the Company will comply with all pertinent federal and state laws with respect to the operation and maintenance of the Permitted Facilities. To the best of my knowledge, the Company has obtained, or is in the process of applying for, the pertinent federal and state permits for the Permitted Facilities.

Dated: June 22, 2010



---

David Avren  
Associate General Counsel  
(Barrister and Solicitor in the Province  
of British Columbia, Canada)  
British Columbia Hydro and Power Authority

## EXHIBIT C

UNITED STATES OF AMERICA  
BEFORE THE  
DEPARTMENT OF ENERGY  
OFFICE OF FOSSIL ENERGY

BRITISH COLUMBIA TRANSMISSION  
CORPORATION

)  
)  
) PRESIDENTIAL PERMIT  
) NO. PP-22

APPLICATION OF BRITISH COLUMBIA TRANSMISSION CORPORATION  
FOR A  
PRESIDENTIAL PERMIT AMENDMENT

## TABLE OF CONTENTS

1.	INFORMATION REGARDING THE APPLICANT .....	1
1.1	Legal Name of Applicant .....	1
1.2	Legal Name of All Partners.....	2
1.3	Communications and Correspondence.....	2
1.4	Foreign Ownership and Affiliations.....	2
1.5	Existing Contracts with Foreign Governments or Foreign Private Concerns .....	3
1.6	Compliance with Law .....	3
1.7	Successor to British Columbia Hydro and Power Authority .....	3
2.	INFORMATION REGARDING THE TRANSMISSION FACILITIES.....	4
2.1	Overview .....	4
2.2	Technical Description .....	6
2.3	Burial Depth .....	7
2.4	Cable and Ancillary Equipment .....	7
2.5	Cathodic Protection .....	10
2.6	Maps.....	10
2.7	Bulk Power System Information.....	11
3.	INFORMATION REGARDING POTENTIAL ENVIRONMENTAL IMPACTS .....	11
3.1	Statement of the Environmental Impacts .....	11
3.2	Historic Places.....	12
3.3	Minimum Rights-of-Way for Construction, Operation, and Maintenance of the Transmission Lines .....	13
3.4	Threatened or Endangered Wildlife or Plant Life.....	14
4.	DESCRIPTION OF ALTERNATIVES.....	15
5.	FEDERAL, STATE AND LOCAL APPROVALS .....	16
6.	EXHIBITS.....	16

**UNITED STATES OF AMERICA  
BEFORE THE  
DEPARTMENT OF ENERGY  
OFFICE OF FOSSIL ENERGY**

**BRITISH COLUMBIA TRANSMISSION  
CORPORATION**

)  
) **PRESIDENTIAL PERMIT**  
) **NO. PP-22**

**APPLICATION OF BRITISH COLUMBIA TRANSMISSION CORPORATION  
FOR A  
PRESIDENTIAL PERMIT AMENDMENT**

Pursuant to Section 202(e) of the Federal Power Act, 16 U.S.C § 824(a)(e)(1994), Executive Order 10485, as amended by Executive Order 12038, and the U.S. Department of Energy ("DOE"), Office of Fossil Energy's administrative procedures (10 C.F.R. §205.320, *et seq.*), British Columbia Transmission Corporation ("BCTC" or "Applicant") hereby respectfully files this application for a Presidential Permit Amendment authorizing the construction, connection, operation, and maintenance of facilities for the transmission of electric energy at the international boundary between the United States ("U.S.") and Canada, as more fully described herein ("Application"). A copy of the Presidential Permit PP-22 (originally issued by the DOE in Federal Power Commission Docket No. E-6588, 1955), together with its subsequent amendments, is attached to this Application as Exhibit A (the "Permit"). In support of this Application, BCTC respectfully states as follows:

**1. INFORMATION REGARDING THE APPLICANT**

**1.1 Legal Name of Applicant**

The legal name of the Applicant is British Columbia Transmission Corporation. BCTC is a provincial Crown corporation under the laws of the Province of British Columbia, Canada,

having a principal place of business at Suite 1100, Four Bentall Centre, 1055 Dunsmuir Street, Vancouver, B.C., Canada.

#### **1.2 Legal Name of All Partners**

The Applicant has no partners in connection with the Project (as defined below).

#### **1.3 Communications and Correspondence**

All communications and correspondence regarding this Application should be addressed to the following:

Bruce Barrett, P. Eng.  
Vice President, Major Projects  
British Columbia Transmission Corporation  
Suite 1100, Four Bentall Centre  
1055 Dunsmuir Street  
P.O. Box 49260  
Vancouver, British Columbia V7X 1V5  
Canada  
TEL: 604.699.7380  
FAX: 604.699.7321  
Email: bruce.barrett@bctc.com

#### **1.4 Foreign Ownership and Affiliations**

BCTC is a provincial Crown corporation, organized and owned by the Province of British Columbia and administered by a government-appointed board of directors for a public purpose. BCTC has the corporate authority to construct, connect, operate, and maintain the Vancouver Island Transmission Reinforcement Project, as more fully described in this Application and the exhibits hereto (the "Project"). The Project's transmission facilities will be owned by British Columbia Hydro and Power Authority, a provincial Crown corporation.

### **1.5 Existing Contracts with Foreign Governments or Foreign Private Concerns**

The Applicant does not have any existing contracts with any foreign (i.e., non-Canadian or non-U.S.) government, or any foreign (i.e., non-Canadian or non-U.S.) private concerns, relating to the Project or to any purchase, sale or delivery of electric energy over the Project's electric facilities. No such contracts with respect to the Project are expected to be entered into in the future, but if any such contracts are entered into before the Project is completed, they will be disclosed to the DOE.

### **1.6 Compliance with Law**

As set forth in an opinion of counsel attached to this Application as Exhibit B, the construction, connection, operation, or maintenance of the proposed transmission facilities described herein is within the corporate powers of BCTC. Further, BCTC has complied with, or will comply with, all pertinent federal and state laws related to the construction, connection, operation, or maintenance of the proposed transmission facilities.

### **1.7 Successor to British Columbia Hydro and Power Authority**

BCTC is the successor of British Columbia Hydro and Power Authority ("BC Hydro") for purposes of the construction, connection, operation and maintenance of the Project. BCTC is a provincial Crown corporation under the provisions of the Business Corporations Act (British Columbia). In 2003, by reason of the Transmission Corporation Act (British Columbia) (the "Act") and agreements entered into by BC Hydro and the Applicant and designated by the Lieutenant Governor in Council pursuant to Section 3(1) of the Act, the Applicant acquired the powers, rights, privileges, concessions and franchises of British Columbia Hydro and Power Authority with respect to the construction, connection, operation and maintenance of the transmission system previously operated by BC Hydro in the Province of British Columbia,

Canada, including the Project. The Applicant respectfully requests the Permit to be amended to name the Applicant as Permittee.

## **2. INFORMATION REGARDING THE TRANSMISSION FACILITIES**

### **2.1 Overview**

BCTC operates three transmission interconnection systems between the mainland of British Columbia and Vancouver Island:

- Two 138 kilovolt (kV) alternating current (AC) circuits installed in 1956 and 1958;
- A 300-kV high voltage direct current (HVDC) system installed in 1969 and 1976; and
- Two 500-kV AC circuits installed in 1983 and 1985.

BCTC is proposing to replace a portion of this system by replacing and upgrading two existing 138 kV circuits with new 230 kV, 600-megawatt (MW) AC infrastructure; one circuit will continue to operate at 138 kV. For the marine portion of the project, only one 138 kV circuit will be replaced with a new 230 kV circuit. New facilities are proposed within an existing transmission corridor that extends from the Arnott Substation in Delta, B.C. to the Vancouver Island Terminal Station north of Duncan, B.C.

The total Project corridor length (in Canada and the U.S.) will be approximately the same as the existing corridor—about 41 miles (66.7 kilometers). The overhead segments of the corridor (all within British Columbia) will total about 24 miles (39.3 kilometers). The submarine cable segments will total about 17 miles (27.4 kilometers) in Canadian and U.S. waters.

A portion of the existing 138 kV transmission system (a set of seven submarine cables in the Strait of Georgia) passes through about 7.5 miles (12 kilometers) of U.S. waters to the west of Point Roberts in Whatcom County. With implementation of the Project, the southernmost three of these seven cables will be replaced.

BCTC is proposing this Project to provide reliable capacity to serve existing demand and future load growth on Vancouver Island.

BCTC is responsible for regulatory and environmental approvals for both the U.S. and Canadian portion of the Project and has filed related documents with the United States Army Corps of Engineers (the "Corps"), which is the designated federal "lead agency" for the environmental determinations with respect to the Project. A copy of the filing of the Joint Aquatic Resources Permit Application (JARPA) filed with the Corps in August 2006 and the correspondence with the Corps, including a March 7, 2007 memorandum to the Corps requesting amendment to the original project description, and a June 2006 letter from the Corps indicating its initial determination that the Project will be authorized under Nationwide Permit 12, are attached to this Application as Exhibit C.

Applications for other U.S. federal, state and local approvals have been filed, and approvals are anticipated in summer 2007. Construction for the portion of the Project in U.S. waters will take place in two phases over the course of approximately one year for expected in-service by October 2008. Cable removal will occur during an approximately two-week period as early as summer 2007, and cable installation will occur during an approximately two-week period in the summer 2008.

## **2.2 Technical Description**

### **Project Work in Canada**

The project will involve the removal of some existing facilities and construction of replacement overhead lines (in Canada) and submarine transmission cables (in Canada and the U.S.) within new and existing rights-of-way as follows:

- Within the Strait of Georgia, three of the existing single-phase 138 kV submarine cables in the southern part of the corridor will be decommissioned and removed and three new 230-kV cables will be installed. The four remaining submarine cables will remain and continue to operate at 138 kV.
- A similar but shorter submarine cable replacement will be performed within Trincomali Channel in Canadian waters between Parker Island and Salt Spring Island.
- On terrestrial portions of the Project, two existing 138 kV single-circuit overhead lines will be removed and replaced with a double circuit 230 kV overhead line. One of the circuits will be connected to the existing submarine cables to remain operated at 138 kV. The other circuit will be connected to the new 230 kV submarine cables and operated at 230 kV.

### **Project Work in the U.S.**

Project work within the U.S. will be confined to about 7.5 miles (12 kilometers) of submarine cable decommissioning and replacement within the Strait of Georgia west of

Point Roberts, Washington. (A technical description of Project work in the U.S. is contained in Section 2.4 below.)

### **2.3 Burial Depth**

The cables will be buried in intertidal and shallow subtidal areas to prevent tripping or snagging hazards to beach users and to prevent cable damage due to currents, tides or boat anchors. In U.S. waters in the Strait of Georgia, the cables will be installed across intertidal mud flats by mechanical water-jetting to a vertical depth of about 3 feet (1 meter) beneath the sea bottom, out to the minus 13.1-foot (minus 4-meter) bathymetric contour, referenced to the vertical survey datum at mean lower low water (MLLW). Each cable will be buried in a separate trench approximately 33 feet (10 meters) apart.

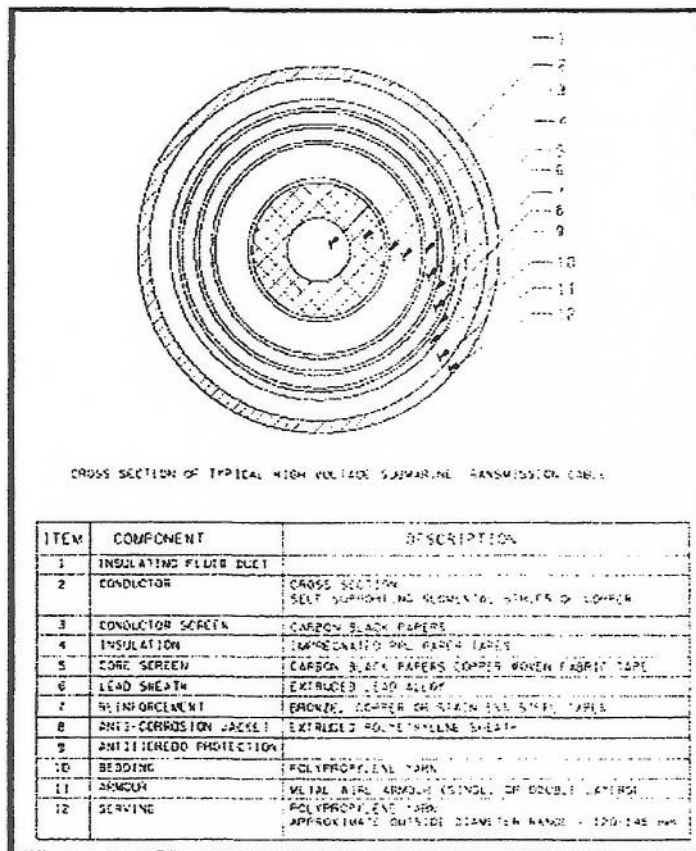
### **2.4 Cable and Ancillary Equipment**

The 230 kV alternating current (AC) circuit will consist of three single-phase submarine cables. The circuit (i.e., a "cable system") will be rated to continuously transfer, in either direction, approximately 600 MW.

- The new submarine cables will be a self-contained, fluid-filled (SCFF) design, in which the cable insulation is pressurized with insulating fluid supplied from the cable terminals. The outside cable diameter will be approximately 125 mm (5 inches). Three cables will be installed to make up one 230 kV AC circuit.
- A cross section of a typical SCFF submarine cable is shown in Figure 1 below. The central stranded-copper conductor is the current-carrying component. Its hollow core provides a passageway for insulating fluid under static pressure provided by equipment at the cable terminals. The insulating fluid saturates the

cable insulation, maintaining the electrical integrity of the cable, and prevents damaging ingress of water in the unlikely event of an underwater leak. The proposed insulating fluid is linear alkylbenzene, which provides optimal electrical, thermal, hydraulic and biodegradability characteristics. The fluid functions to control the high electric stresses in the insulation, which is important in this higher voltage (230 kV) application. The fluid's low viscosity aids in maintaining internal cable pressure requirements when the electrical load changes rapidly. It also evaporates relatively quickly from the water surface in the unlikely event of a leak. Alkylbenzene has a low order of fish, mammalian, and human toxicity and evaporates and biodegrades quickly.

Figure 1 – Submarine Transmission Cable



In waters deeper than -13.1 feet MLLW (-3 meters Canadian Chart Datum (CD)), cables are resting on the sea floor. These deeper water cables will be removed by pulling them onto a barge using a linear cable engine. In shallow waters, buried cables will be pulled from the sediments onto barges with winches or block-and-tackle.

BCTC will install three new 230 kV submarine cables. Cables will be laid directly on the seabed in waters deeper than -13.1 feet MLLW(-3 m CD) and buried to a depth of 3.3 feet

(1 meter) above -13.1 feet MLLW(-3 m CD). Burial of individual cables is required to provide protection from wave action and potential damage from boats and anchors, as well as for environmental reasons.

Landing a submarine cable is referred to as a "float-in". This process involves spooling cable off the primary cable-laying vessel, attaching floats and towing or winching the cable to shore. The primary cable-laying barge, which measures approximately 270 by 90 ft (82 by 27 m), will be anchored in water greater than 22.0 ft. deep based on MLLW (6 m CD) deep for the duration of landing operations. Cable float-in procedures pose risk to cable integrity, hence installers prefer to do this over as short a distance as possible. The installation of each cable system will take approximately one day.

## **2.5 Cathodic Protection**

No cathodic protection is planned for the portion of submarine cable in U.S. waters or the cables landing on the Canadian mainland at the English Bluff Terminal on the eastern shore of Georgia Strait. Cathodic protection systems will be installed at the cable landing sites on the western shore of Georgia Strait (Galiano Island) and at both cable landings (Parker Island and Salt Spring Island) on Trincomali Channel in Canadian waters. Those three cathodic protection systems are planned to be impressed current systems. These systems will have no effects in U.S. waters or on mainland shore facilities.

## **2.6 Maps**

A combined general area map and other maps showing the physical location (longitude and latitude) and ownership of the facilities on the international border are attached to this Application as Exhibit D.

## **2.7 Bulk Power System Information**

No bulk power system information is provided with this Application because there will be no bulk power supply facility within the U.S.

## **3. INFORMATION REGARDING POTENTIAL ENVIRONMENTAL IMPACTS**

### **3.1 Statement of the Environmental Impacts**

Project work within the U.S. is confined entirely to the Strait of Georgia; therefore, there are no flood plain or wetland impacts. The entire Project area within the U.S. is designated as a Wildlife Habitat Conservation Area and is subject to Whatcom County Critical Areas Ordinance. Please see the Whatcom County Critical Areas Habitat Assessment report prepared for the Project for details of conservation measures included as part of the proposed Project activities. A copy of such report is attached to this Application as Exhibit E.

For the effects determination for federally designated critical habitat, please see the Project Biological Assessment, a copy of which is attached to this Application as Exhibit F, and Section 3.4 below.

Work within the U.S. will take place in the Strait of Georgia, a navigable waterway.

Regarding Indian land impact, please see Section 3.2 below.

Regarding historic site impact, please see Section 3.2 below.

BCTC is not required to take any mitigation action in connection with National Environmental Protection Act or State Environmental Protection Act review. However, at the request of the Washington State Department of Fish and Wildlife, BCTC will undertake shoreline improvements at Lighthouse Park in Point Roberts, Washington, which work is

intended to mitigate temporary functional impacts to intertidal substrate habitats and consists of restoration of the beach and shoreline vegetation around the BC-Tel Building site. BCTC will also undertake construction of eelgrass beds to mitigate the temporary loss and disturbance of eelgrass during cable removal and cable installation.

### **3.2 Historic Places**

Tsawwassen First Nation ("TFN") documents the use of the west coast of Point Roberts as a primary canoe route. Ethnographic documentation of the TFN indicates the presence of a winter village located at English Bluff, British Columbia. For the BC provincial Environmental Assessment review process, BCTC conducted an Archaeological Impact Assessment for the transmission corridor including English Bluff. Recommendations for avoidance and monitoring were made for two sites at English Bluff and, as a condition of the BC Environmental Assessment Certificate awarded to BCTC, BCTC will comply with commitments made to avoid potential impacts to these sites by the Project, monitor Project work near these sites, and report any inadvertent discoveries. With adherence to these commitments and conditions, the Project will not adversely affect this resource.

Site 45WH207h is Boundary Marker #1 demarcating the international boundary between Canada and the U.S. The boundary marker, which was erected in 1861, is an obelisk 19 feet (5.8 meters) in height assembled from a number of smooth granite blocks mortared together on a rubble foundation. It is located on Point Roberts overlooking the Strait of Georgia a short distance from the beach. The proposed Project will not directly or indirectly impact this marker.

Site 45WH560 is documented with the Washington State Department of Archaeology and Historic Preservation as a Pre-Contact Shell Midden and is considered a traditional cultural

property to the Lummi Nation. The site boundaries of 45WH560 are documented to extend along the shore from the Point Roberts Lighthouse north to near the Gulf Road and Marine Drive intersection. The west coast of Point Roberts, which includes site 45WH560, is identified in the Lummi Language as Smo'qwech. The proposed Project will not directly impact this pre-contact shell midden site.

The Mary Island shipwreck is located approximately 1 mile (1.7 kilometers) south of the Project right-of-way. The Mary Island caught fire and sank on February 17, 1934, 8 miles (12.9 kilometers) west of Point Roberts (Millennia Research Limited 2005). The proposed Project will not directly impact this shipwreck site.

### **3.3 Minimum Rights-of-Way for Construction, Operation, and Maintenance of the Transmission Lines**

The Project will use existing rights-of-way in U.S. waters administered by Washington State. Except for an easement that BCTC will acquire from Gerald and Karen White concerning a small portion of Tideland Block No. 28 within the Department of Natural Resources corridor, the Project does not require the acquisition of new rights-of-way in the U.S. Except for some very minor adjustments, the Project does not require the acquisition of new rights-of-way in Canada. Minimum rights-of-way required in the marine environment for one circuit (consisting of three single-phase submarine cables) in shallow water locations will be approximately 125 feet (40 meters), to provide ten meters outside and between the cables. Right-of-way requirements in deep water are greater and are generally twice the water depth for each cable. This is required to permit retrieval, repair, and replacement of the cables from a repair vessel.

The Project will have no land-based facilities in the U.S. and will require no terrestrial rights-of-way in the U.S. Land-based facilities in Canada will be constructed within existing rights-of-way or on lands already owned by BC Hydro.

### 3.4 Threatened or Endangered Wildlife or Plant Life

There are no threatened or endangered plant species in or near the Project area.

Endangered wildlife species possible in the Project area include:

- chinook salmon (*Oncorhynchus tshawytscha*) – Puget Sound evolutionarily significant unit (ESU),
- bull trout (*Salvelinum confluentus*) – Coastal/Puget Sound distinct population segment (DPS),
- steelhead trout (*Oncorhynchus mykiss*) – Puget Sound DPS (proposed),
- killer whale (*Orcinum orca*) – southern resident population,
- humpback whale (*Megaptera noveangliae*),
- Steller sea lion (*Eumetopias jubtus*),
- leatherback sea turtle (*Dermochelys coriacea*),
- bald eagle (*Haliaeetus leucocephalus*), and
- marbled murrelet (*Brachyramphus marmoratus*).

Observations of three of the marine species—humpback whale, leatherback sea turtle, and Steller sea lion—have not been reported from the Project area or vicinity, and are thought to be present only rarely, if at all. The remaining listed species—Chinook salmon, bull trout, steelhead trout, southern resident killer whale, bald eagle, and marbled murrelet—are likely to be present in the Project area.

Of the federally listed species that occur in the Project area, Chinook salmon and killer whale are the only species with designated or proposed critical habitat in the Project area.

Please see the Project Biological Assessment, attached to this Application as Exhibit F, for more detail on effect analyses. Based on this Biological Assessment, the Project was determined to have no effect on species that rarely inhabit the defined Action Area (leatherback sea turtles). The Project may affect, but is not likely to adversely affect, Chinook salmon, bull trout, Southern Resident Killer Whales, Steller sea lions, humpback whales, bald eagles, marbled murrelets or essential fish habitat for Pacific salmon, groundfish, or coastal pelagic species. The Project will not jeopardize continued existence of stocks or population segments of steelhead trout, nor will the Project adversely modify proposed critical habitat for Southern Resident Killer Whales.

#### **4. DESCRIPTION OF ALTERNATIVES**

Prior to proposing the Project as the preferred method of meeting demand and capacity needs on Vancouver Island, BCTC turned to existing demand-side management programs to determine if forecasted needs could be met through various conservation programs such as BC Hydro's "Power Smart" and "Resource Smart" efficiency initiatives. BCTC determined that such programs could not meet forecasted shortfalls and, given the failure of recent proposals for on-island generation, transfer from the mainland was the most feasible and cost-effective solution.

As part of its engineering due diligence, and to meet the requirements of Canadian and U.S. environmental and electrical power regulations, BCTC evaluated technically and economically feasible alternatives to the Project and alternative means to carry out the Project.

Transmission alternatives considered included a number of alternate routes as well as various 500 kV AC and HVDC alternatives. The 230 kV AC alternative selected results in the least cost from both capital investment and operating costs perspectives. The alternative chosen also has the least environmental effect of the available transmission alternatives.

BCTC's analysis of the available alternatives was reviewed by two independent regulatory authorities in Canada, the BC Utilities Commission and the BC Environmental Assessment Office. Alternatives and environmental mitigation strategies for the portions of the Project in the marine environment within the Strait of Georgia near Point Roberts have been jointly examined by U.S. and Canadian fish and wildlife agencies.

For further discussion of the evaluation of each alternative considered, please see the Project Description Report and Route Options Analysis attached to this Application as Exhibit H.

## **5. FEDERAL, STATE AND LOCAL APPROVALS**

A summary of all anticipated federal, state and local approvals is provided in Exhibit G attached to this Application.

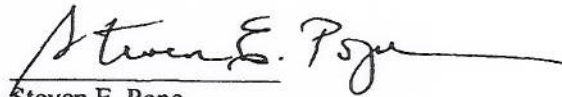
## **6. EXHIBITS**

The following exhibits are included:

Exhibit A	Presidential Permit PP-22, as amended to the date of this Application
Exhibit B	Opinion of Counsel
Exhibit C	U.S. Army Corps of Engineers Filing
Exhibit D	Project Area Maps
Exhibit E	Whatcom County Critical Areas Habitat Assessment Report
Exhibit F	Project Biological Assessment
Exhibit G	Federal, State and Local Approvals Chart
Exhibit H	Project Description Report and Route Options Analysis

WHEREFORE, BCTC respectfully requests that the DOE issue to BCTC an amendment to the Permit authorizing the construction, connection, operation, and maintenance of the facilities described herein for the transmission of electric energy at the international boundary between the U.S. and Canada.

Respectfully submitted,



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